

1 1. A method comprising:
2 forming a chalcogenide access device having a
3 snapback voltage low enough to avoid disturbing data stored
4 in a memory element while reading the memory element
5 selected by the access device.

1 2. The method of claim 1 including forming the
2 chalcogenide access device to have a snapback voltage less
3 than the threshold voltage of the memory element.

1 3. The method of claim 2 including forming the
2 memory element of a phase change material.

1 4. The method of claim 2 including forming the
2 memory element of a thin film material.

1 5. The method of claim 1 including forming at least
2 two arrays of memory elements stacked one on top of the
3 other.

1 6. The method of claim 5 including forming memory
2 arrays with at least two memory elements each having a
3 chalcogenide access device.

1 7. The method of claim 6 including forming said
2 chalcogenide access devices above a semiconductor
3 substrate.

1 8. The method of claim 7 including forming said
2 memory elements above said semiconductor substrate.

1 9. The method of claim 8 including forming an access
2 device over a memory element.

1 10. The method of claim 9 including forming the
2 access device directly on top of the memory element without
3 an intervening barrier layer.

1 11. A memory comprising:
2 a cell including a chalcogenide access device and
3 a memory element, the chalcogenide access device having a
4 snapback voltage low enough to avoid disturbing data stored
5 in the memory element while reading the memory element.

1 12. The memory of claim 11 wherein said chalcogenide
2 access device has a snapback voltage less than the
3 threshold voltage of the memory element.

1 13. The memory of claim 12 wherein said memory
2 element includes a phase change material.

1 14. The memory of claim 12 wherein said memory
2 element includes a thin film material.

1 15. The memory of claim 11 including at least two
2 memory arrays, each array including a plurality of cells
3 stacked one on top of the other.

1 16. The memory of claim 15 including at least two
2 memory elements each having a chalcogenide access device.

1 17. The memory of claim 16 including a semiconductor
2 substrate, said chalcogenide access devices of said two
3 memory elements formed above said semiconductor substrate.

1 18. The memory of claim 17 wherein said two memory
2 elements are formed above said semiconductor substrate.

1 19. The memory of claim 18 including an access device
2 located over at least one of the two memory elements.

1 20. The memory of claim 19 wherein the access device
2 is directly on top of the memory element.

1 21. A system comprising:
2 a processor-based device;

3 a wireless interface coupled to said processor-
4 based device; and

5 a memory coupled to said device, said memory
6 including a cell with a chalcogenide access device and a
7 memory element, the chalcogenide access device having a
8 snapback voltage low enough to avoid disturbing data stored
9 in the memory element while reading the memory element.

1 22. The system of claim 21 wherein said chalcogenide
2 access device has a snapback voltage less than the
3 threshold voltage of the memory element.

1 23. The system of claim 22 wherein said memory
2 element includes a phase change material.

1 24. The system of claim 21 wherein said memory
2 includes at least two arrays each having rows and columns,
3 one of said arrays stacked above the other of said arrays.

1 25. The system of claim 24 including two memory
2 elements each having a chalcogenide access device.

1 26. The system of claim 25 including a substrate,
2 said chalcogenide access devices formed above said
3 substrate.

1 27. The system of claim 26 wherein said memory
2 elements are formed above said semiconductor substrate.

1 28. The system of claim 27 including an access device
2 located over the memory element.

1 29. The system of claim 28 wherein the access device
2 is directly on top of the memory element.

1 30. The system of claim 21 wherein said access device
2 and said memory element include chalcogenide material and
3 the chalcogenide material used in the access device and the
4 memory element are different chalcogenide materials.

1 31. The system of claim 21 wherein said wireless
2 interface includes a dipole antenna.